



# Source Water Assessment Program (SWAP) Report For Cole's Neck Water Supply

## What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? Inventory land uses within the recharge areas of all public water supply sources;
- ? Assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? Publicize the results to provide support for improved protection.

## SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the  
Massachusetts Department of  
Environmental Protection,  
Bureau of Resource Protection,  
Drinking Water Program

Date Prepared:  
September 21, 2001

**Table 1: Public Water System (PWS) Information**

<b>PWS NAME</b>	Cole's Neck Water Supply
<b>PWS Address</b>	220 West Main Street
<b>City/Town</b>	Wellfleet, Massachusetts
<b>PWS ID Number</b>	4318094
<b>Local Contact</b>	Mark Vincent
<b>Phone Number</b>	508 349-0315

<b>Well Name</b>	<b>Source ID#</b>	<b>Zone I (in feet)</b>	<b>IWPA (in feet)</b>	<b>Source Susceptibility</b>
Well #1	4318094-01G	230	844	Moderate
Well #2	4318094-02G	230	844	Moderate

## Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

### Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

### This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

## 1. Description of the Water System

The Cole's Neck Water Supply system is a community public water supply serving 31 homes and the towns transfer station. Well #1 and Well #2 are 8-inch sand and gravel wells drilled to a depth of 147 feet and 145 feet, respectively. Well #1 and Well #2 received final source approval by the Department in a letter dated August 24, 1988 for 20,000 gallons per day. Based upon the 20,000 gallons per day withdrawal limit, the Zone I is 230 feet and Interim Wellhead Protection Area (IWPA) is 844 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. The wells are located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers (i.e. clay) that can prevent

### What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

### What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

contaminant migration. Please refer to the attached map of the Zone I and IWPA.

The Cole's Neck public water supply was constructed in order to provide safe supply of drinking water for up to fifty (50) residents where private wells had been contaminated or threatened by a municipal landfill plume.

The public water system is currently in the process obtaining approval to treat the wells water with calcium carbonate (calcite) contactor system for corrosion control. The contactor system is to be utilized to adjust the pH of the water to reduce its corrosiveness. For current information on monitoring results and treatment or for a copy of the most recent Consumer Confidence Report, please contact the Public Water System person listed above in Table 1.

## 2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

#### Key issues include:

1. **Lack of ownership of Zone I,**
2. **Residential,**
3. **Storm Water, and**
4. **Storage, Use and Handling of Diesel Fuel.**

The overall ranking of susceptibility to contamination for the well is **Moderate**, based on the presence of at least one **Moderate** threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone I**– Currently, the well meets DEP's requirements that only allow water supply related activities in Zone Is. The facility's Zone I is entirely comprised of woodlands. Currently, the well does not meet the Department requirements that the public water supplier own or control all land encompassed by the Zone I. The Department records indicate that the town only owns 80 feet of the 230 feet of land north of the well. The rest of the Zone I land north of the well is owned by the National Seashore. It is unlikely that future development would occur in an area under the control of the National Park Service. Please note that systems not meeting Department Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems. Access to the wells is restricted

**Table 2: Table of Activities within the Water Supply Protection Areas**

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Septic System	No	Well #1, #2	Moderate	Refer to septic systems brochure in the attachments
Driveways and roads	No	Well #1, #2	Moderate	Limit road salt usage and provide drainage away from wells
Residential	No	Well #1, #2	Moderate	Septic systems, fuel storage, fertilizer and pesticide use
Storage, use and handling of diesel fuel	Well #1, #2	Well #1, #2	Moderate	Diesel Generator, transformer

\* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - [www.state.ma.us/dep/brp/dws/](http://www.state.ma.us/dep/brp/dws/).

## Glossary

**Zone I:** The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

**IWPA:** A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I. To determine IWPA radius, refer to the attached map.

**Zone II:** The primary recharge area defined by a hydrogeologic study.

**Aquifer:** An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

**Hydrogeologic Barrier:** An underground layer of impermeable material that resists penetration by water.

**Recharge Area:** The surface area that contributes water to a well.

by a gated access road and a fenced enclosure.

### Recommendations:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Ensure that the National Park Service is aware of the Zone I boundary.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ Conduct regular inspections of the Zone I and IWPA.
- ✓ Look for illegal dumping and evidence of vandalism.

2. **Residential Land Use** - If managed improperly, household hazardous waste, septic systems, lawn care, and pet waste can all contribute to groundwater contamination. Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. The septic system leaching fields for residential homes are located just beyond the Zone I of 230 feet (South and Southwest of wells). If a septic system fails or is not properly maintained, it could be a potential source of microbial contamination. Fertilizers and pesticides contain hazardous chemicals that can travel through the soil and contaminate ground water if over-applied. Pet waste may contain bacteria, parasites, or viruses that are a health risk. Water supplies may also be threatened from improper use and disposal of chemical products used in homes or businesses. Educating residents and businesses on proper disposal of these materials is the best defense against pollution.

### Recommendations:

- ✓ Proper Household Hazardous Waste Disposal - Residents should dispose of used oil, antifreeze, paints, and other household chemicals properly - not in septic systems. Encourage residents to participate in Household Hazardous Waste Collection days or centers. Educate residents on septic systems about proper disposal practices. Refer to <http://www.state.ma.us/dep/brp/files/yoursyst.htm> for additional information. .
- ✓ Septic System Care - Septic system components should be located, inspected, and maintained on a regular basis.
- ✓ Underground and Aboveground Storage Tanks— Encourage residents to upgrade fuel oil storage tanks to incorporate proper containment and safety practices. Any modifications must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements. Consult with the local fire department for any additional local code requirements.
- ✓ Environmentally Sound Lawn Care - Provide educational materials to residents about the proper application of pesticides or fertilizers. Information on environmentally sound lawn care practices is available from the Massachusetts

Department of Food and Agriculture Pesticide Bureau's at <http://www.massdfa.org>.

3. **Storm water** – Local roads are located within the IWPA for Well #1 and #2. As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential contaminants include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks, maintenance, washing or accidents. Catch basins transport storm water from the roadway and adjacent properties to the ground.

### Recommendations:

- ✓ Have the catch basins within the IWPA inspected, maintained, and cleaned on a regular schedule. Additionally, street and parking lot sweeping reduces the amount of potential contaminants in storm water runoff.
- ✓ To learn more refer to the *Storm Water Management Handbook, Volume 1 and 2* for information on BMPs and documents available at <http://www.state>.

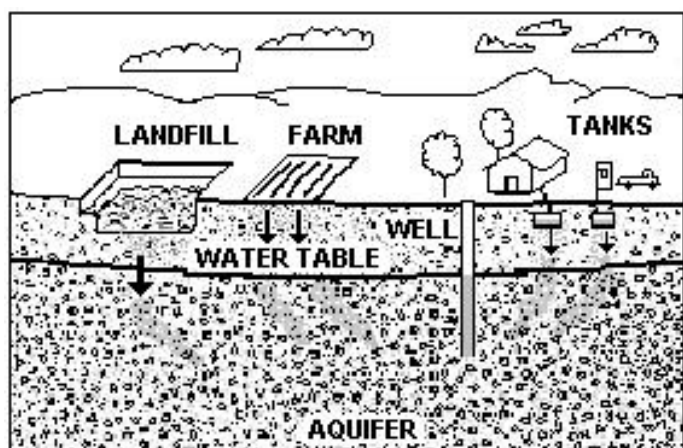


Figure 1: Example of how a well could become contaminated by different land uses and activities.

### For More Information:

Contact Mark Dakers in DEP's Lakeville Office at (508) 946-2847 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:

[www.state.ma.us/dep/brp/dws/](http://www.state.ma.us/dep/brp/dws/)

### Additional Documents:

To help with source protection efforts, more information is available by request or online at [www.state.ma.us/dep/brp/dws/](http://www.state.ma.us/dep/brp/dws/), including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier, town boards, and the local media.

[ma.us/dep/brp/ww/wwpubs.htm](http://ma.us/dep/brp/ww/wwpubs.htm).

4. **Storage, Use and Handling of Diesel Fuel** - A diesel generator, which can run the well pumps in case of a commercial power outage, is located within the Zone I of both wells. The generator has a small fuel tank that must be filled prior to running the generator.

#### Recommendations:

- ✓ Do not store fuel cans in your Zone I.
- ✓ Upgrade all fuel storage tanks to incorporate proper containment and safety practices. Consult with the local fire department for any additional local code requirements regarding fuel storage.
- ✓ Upgrade to propane or natural gas for backup power sources.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

## 3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the wells' susceptibility to contamination. Drinking water protection signs were posted within the IWPA. The town has sent public education material regarding protection of drinking water supplies to all residents served by the Cole's Neck public water supply. Cole's Neck Water Supply should review and adopt the **key recommendations above** and the following:

#### Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism; check any above ground tanks for leaks, etc.
- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.
- ✓ A transformer is located within the Zone I. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

#### Training and Education:

- ✓ Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

#### Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, see the hazardous materials guidance manual at [www.state.ma.us/dep/bwp/dhm/dhmpubs.html](http://www.state.ma.us/dep/bwp/dhm/dhmpubs.html).

#### Planning:

- ✓ Work with local officials in Wellfleet to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.

- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

#### Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response for the Grant program (RFR). Other funding

opportunities are described in “Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation” at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

#### **4. Attachments**

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Wellhead Protection Grant Program Fact Sheet
- Pesticide and Fertilizer Use Fact sheets
- One Day Hazardous Waste Collections Fact Sheet